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ANTIMONY

Element Symbol: **Sb**

Atomic Number: **51**

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International Year of
CHEMISTRY
2011



Royal Australian Chemical Institute

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Antimony (Sb) has an atomic number of 51, placing it in group 15 of the periodic table along with arsenic and bismuth. It has a shiny metallic lustre and is bluish-white. In general antimony's chemical properties are very similar to those of arsenic, although it does not have the same reputation as a toxin. Within the earth's crust its average natural abundance is between 0.2 and 0.5 parts per million.

One derivation of the word antimony is from the term 'anti-monos' meaning 'opposed to solitude', based on the belief that antimony could only be found in nature in combination with other elements. This is not strictly correct, as native antimony has been found around the world in places such as the Dauphine in France, the Hartz mountains of Germany, and Sweden. 'Anti-monos' has also been interpreted as meaning 'monk's bane'. The symbol Sb comes from the Latin 'stibium', in turn derived from Greek 'stimmi', ultimately from the Ancient Egyptian root consonant cluster STM, powdered antimony sulfide used to paint the eyelids. There are in excess of 100 known types of antimony mineral, with antimony usually found in conjunction with arsenic, iron, silver and sulfur. The most common natural form of antimony found is the ore known as stibnite, which has the chemical formula Sb_2S_3 and is also known as antimony glance, grey antimony ore and or antimonite. Stibnite is often found in combination with gold or silver.

The knowledge and use of antimony goes back, as hinted above, to the use of antimony sulfide as eyebrow paint in the ancient Middle East. An antimony cast vase was discovered in Tello, Iraq which dates back to 4000 BC. Egyptian copper artefacts dating back to 2500-2200 BC have also been discovered with a thin coating of antimony. Today the main use of antimony as a metal is as an additive for alloys and in lead-acid batteries. The main use of antimony compounds is in flame retardants. Antimony compounds used in flame retardants are antimony pentoxide, sodium antimonate and antimony trioxide. Antimony and its compounds are also used in medicine, plastics, military applications and to colour artificial gems.

Currently about 90% of the world's supply of antimony is produced in China – 13% of total world production at the single Twinkling Star mine in Hunan province. This was closed for a period of time in 2009 after 26 miners were killed when a lift failed, with a resulting spike in world prices. Most of the world's antimony is also consumed in China, to make the range of products shown above for sale to a grateful world.

There are two small Antimony/Gold mines in Australia, Costerfield in Victoria and Hillgrove just down the road from Armidale in New South Wales. Hillgrove suspended production due to technical problems in 2009.

Provided by the element sponsor Chris Fellows

ARTISTS DESCRIPTION

Lifting paint in a silvery metallic vision is how I saw this element. It is also used in fire retardants so I made the symbols alive with fire. The edition of the eyes comes from the ancient use of this element by the ancient Middle East for eyebrow paint.

This is a digital print with my own photographs and scanned elements brought together in Photoshop and blended using a variety of techniques and colouring.

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